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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,361

06/19/2006

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EXAMINER

NGUYEN, VU ANH

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/06/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,361	<b>Applicant(s)</b> TAGUCHI ET AL.	
	<b>Examiner</b> Vu Nguyen	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. Acknowledgement is made of applicant's amendments to the Specification and the Claims. Claims 1-5, and 7-10 are pending.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (U.S. 6,962,949) in view of Yamanouchi et al. (US 2002/0107301).

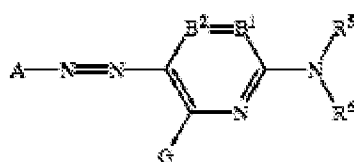
5. Regarding the limitations set forth in these claims, Smith et al. (Smith, hereafter) discloses an ink composition comprising an anionic dye, water, water-soluble organic solvent, and an amine-based cationic polymer (col. 6, lines 52-57), wherein the anionic

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dye and the cationic polymer form a complex in the ink (col. 6, lines 46-47). Inherently, the dye (in neutralized form), the cationic polymer (in neutralized form), and the complex are soluble in water. The anionic dyes comprise numerous species, including monoazo dyes, diazo dyes, and phthalocyanine sulfonate salts (col. 13, lines 23-67; col. 14, lines 1-30). Also disclosed is a method of ink preparation wherein the anionic dye and the cationic polymer is mixed in water to form a salt, that is, the dye is playing the role of the counterion to the cationic polymer (col. 21, lines 33-46). The method of ink preparation includes forming the dye-polymer complex in an aqueous medium, followed by (optional) heating, filtering (i.e., desalting), and addition of additives (col. 22, lines 14-27). The disclosed ink is an inkjet ink (col. 22, lines 28-52). An ink set is implicitly disclosed in the prior art since ink compositions are set in plural form (col. 22, lines 14, 28) and dyes of various colors are employed (col. 13 & 14). An ink jet printing method is also taught and different types of substrates are disclosed (col. 22, lines 28-52). The substrates include plain paper and ink jet paper (col. 25, line 17).

6. Clearly, Smith teaches all the limitations set forth in the instant claims except it fails to teach the claimed dyes.

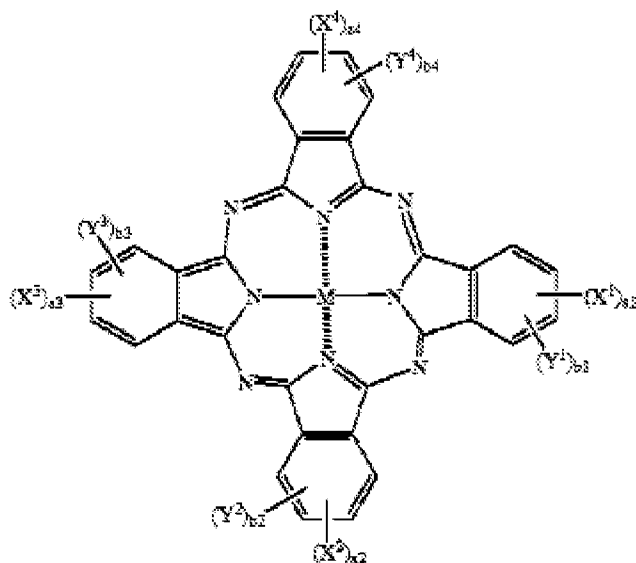
7. Regarding the claimed dyes, Yamanouchi teaches a water-based ink for ink jet recording comprising the following dyes (the first 2 in Abstract and the 3rd in [0207]):



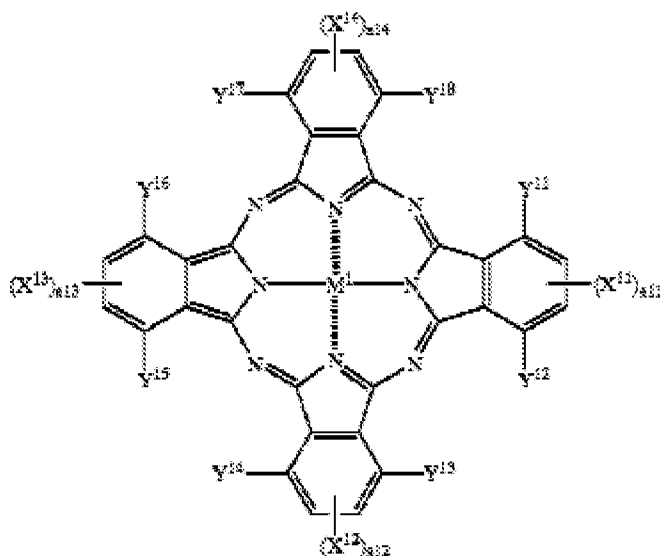
General Formula (M-1)



General formula (C-I)



General formula (C-II)



The definitions of the various groups are similar to those being claimed, except that these dyes are not ionic and are oil-soluble. Nevertheless, these dyes contain acid groups such as carboxylic acid and sulfonic acid groups (see, for example, [0037]).

**[Motivations]** Yamanouchi also teaches that the disclosed dyes have substitution

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groups that are electron-withdrawing groups which raise the oxidation potential of the dyes and thereby increase the ozone resistance property of the dyes [0233].

8. Attentions are drawn to the followings. The Smith disclosure is directed to solutions to drawbacks in waterfastness, smear resistance, intercolor bleed, and lightfastness (col. 6, lines 15-38). The lightfastness property of the ink is improved by addition of a UV absorbing compound (col. 6, lines 52-55). It is acknowledged in the Yamanouchi disclosure that aqueous inks using water-soluble dyes enable high color density [0005]. The main reason that oil-soluble dyes are employed (in the aqueous inks) is to improve waterfastness [0005]. However, to disperse oil-soluble dyes in an aqueous ink requires dispersants, which lower the concentration of dyes in an ink. On the other hand, one of ordinary skill in the art would know that the oil-soluble dyes taught by Yamanouchi can be readily converted into a water-soluble form simply by neutralizing the acid groups with bases.

9. Since the dyes taught by Yamanouchi are ozone-resistant while the inks taught by Smith have high color density, good waterfastness, and good color bleed resistance (these latter two properties are due to fixation by the ionic polymer), it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have neutralized the dyes taught by Yamanouchi and employed them in the inks taught by Smith so that a UV absorber is not needed and the resulting inks have improved lightfastness, waterfastness, and are resistant to intercolor bleed.

***Response to Arguments***

10. Applicant's arguments filed 10/16/2008 have been fully considered but they are not persuasive. Specifically, the applicant alleges that neither Smith nor Yamanouchi, alone or in combination, teaches the claimed water-soluble dyes which contain one of sulfo, carboxyl, or phosphono groups in the molecule (p. 16). On the contrary, the dyes taught by Yamanouchi are highly similar to the claimed dyes. Further, the dyes contain sulfonic acid groups or carboxylic acids groups. For example, in paragraph [0037], it is specified that the  $R^2$  and  $R^3$  groups on the general structure (I) of the dyes can be a  $-\text{CO}_2\text{R}^{53}$  group or a  $-\text{SO}_2\text{R}^{59}$  group wherein  $\text{R}^{53}$  and  $\text{R}^{59}$  can be a hydrogen atom.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vu Nguyen  
Examiner  
Art Unit 1796

/David Wu/  
Supervisory Patent Examiner, Art Unit 1796

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